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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,028

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EXAMINER

CHAN, HENG M

ART UNIT

PAPER NUMBER

1728

NOTIFICATION DATE

DELIVERY MODE

05/06/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,028	<b>Applicant(s)</b> JOHANSSON ET AL.	
	<b>Examiner</b> HENG M. CHAN	<b>Art Unit</b> 1728	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Application***

1. Applicant's amendments and remarks filed 3/2/2011 have been acknowledged. Claims 2-11 and 13-17 are pending.

### ***Priority***

2. Applicants stated in the remarks that a certified copy of foreign priority document 20035172. would be provided to the Examiner.

### ***Drawing/ Claim objections***

3. The previous objections to drawing and claims 2 and 7 have been withdrawn as a result of Applicants' response.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The previous rejections of claims 2, 5, 10, and 16 under 35 USC 112, 2<sup>nd</sup> paragraph have been withdrawn as a result of Applicants' amendments and further consideration.

Claim 11 recites the limitation "the starch gels" in line 2. There is still insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. The rejection of 2-11 and 13-17 under 35 U.S.C. 103(a) as being unpatentable over US 5,851,461 to Bakis et al. as generally presented in the previous Office action is proper and stands. It was a typographical error that claim 1 was also rejected under the same ground in the previous Office action. The rejection has been reiterated below for clarity.

**Claims 2-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,851,461 to Bakis et al.**

Regarding claim 2, Bakis et al. teach a method of manufacturing a porous starch-based product comprising a stable foam, said method comprising:

introducing a gas, at a first temperature, into an aqueous solution of a polysaccharide, for example, starch, after which raising the temperature with heated air generates a gas/liquid phase separation, and the product is crosslinked to achieve said stable foam, wherein said stable foam contains foam bubbles and the average size of said bubbles may be controlled in the range of 5-500  $\mu$  (from column 2, line 46 to column 3, line 13; column 3, lines 18-19 and 25 and 26; column 4, lines 19-24). The introduction of the gas into the aqueous starch solution results in a very fine dispersion of gas bubbles in the solution, which suggests that at least some of the gas is dissolved in the solution. The limitation "pigment or filler" in the preamble is a recitation of an intended use of the claimed invention in the preamble. It must result in a structural

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difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP § 2111.02. In this case, since the porous starch-based product of Bakis et al. comprises a stable foam, it is considered to be capable of performing the intended use.

Bakis et al. do not expressly teach that the average size of bubbles is less than approximately 10 micrometers.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the recited average size of bubbles because a *prima facie* case of obviousness exists in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art”. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2144.05[R-5]. Furthermore, Bakis et al. teach that the pore size can be controlled in the mechanical action of forming the bubbles (column 3, lines 8-13).

Finally, Bakis et al. do not expressly teach a water gel of starch.

However, it would have been obvious to one of ordinary skill in the art at time of invention to have arrived at the claimed invention because the formation of a water gel of starch depends on the starch of choice, the concentration of the starch in the solution, the gelatinization temperature of that starch, etc. Although Bakis et al. begin with an aqueous solution of starch, depending on the identify and content of the starch, as well as the conditions for the mechanical foaming process, the starch may gelatinize due to heat and friction generated by the mechanical action of foaming. The gas would

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have continued to be introduced and dissolved into the resulting water gel of starch to give the wet foam.

Regarding claims 3-11 and 13-17, since steps b), c), and d) of claim 2 are written as optional method steps that are not required by claim 2, the instant claims as written are *proviso* upon limitations c) and d) not required by the independent claim and therefore do not come into force. They are rejected under the same ground of rejection As claim 2.

### ***Response to arguments***

6. Applicant's arguments filed 3/2/2011 have been fully considered but they are not persuasive. Applicants argued that Bakis et al. teach that the polysaccharide derivatives may be aliginic acid or hyaluronic acid that are chelated with multivalent ions. The Examiner noted that starch is disclosed as an alternative to these elements in the reference (column 1, lines 9-11). The skilled artisan would not have been limited to a particularly example in the reference.

Applicants then argued that the polysaccharide is dissolve in an alkaline medium which is not required in the present invention and that Bakis et al. do not expressly teach the claimed average size of bubbles of less than approximately 10 micrometers or a water gel of starch. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge

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which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, Bakis et al. teach introducing a gas into the aqueous solution to form a wet foam, by e.g. beating or otherwise mechanically agitating the material to cause the polysaccharide, which can be starch, to foam (from column 2, line 40 to column 3, line 12). Although the starch may be dissolved in an aqueous base as suggested by Bakis et al., depending on the identity, concentration, and properties such as gelatinization temperature of the starch, as well as the conditions for the mechanical foaming process, the starch may gelatinize due to heat and friction generated by the mechanical action of foaming. As the starch gelatinizes, gas continues to be introduced to the gelatinized starch or starch gel to create the wet foam. This reads on the claimed step of "dissolving air, or other gases into a water gel of starch." The rest of the method was clearly taught in the reference. The Examiner composed this rejection based on general knowledge about starches and expectations from the actions of performing Bakis et al.'s method, not hindsight. Regarding the claimed average bubble size, Bakis et al. teach an overlapping range of average size of bubbles and that the pore size can be controlled in the mechanical action of forming the bubbles (column 3, lines 8-13). A *prima facie* case of obviousness has been established without hindsight.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENG M. CHAN whose telephone number is (571)270-5859. The examiner can normally be reached on Monday to Friday, 9:30 am EST to 6:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer K. Michener can be reached on (571)272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer K. Michener/  
Supervisory Patent Examiner, Art Unit 1728

/HENG M CHAN/  
Examiner, Art Unit 1728